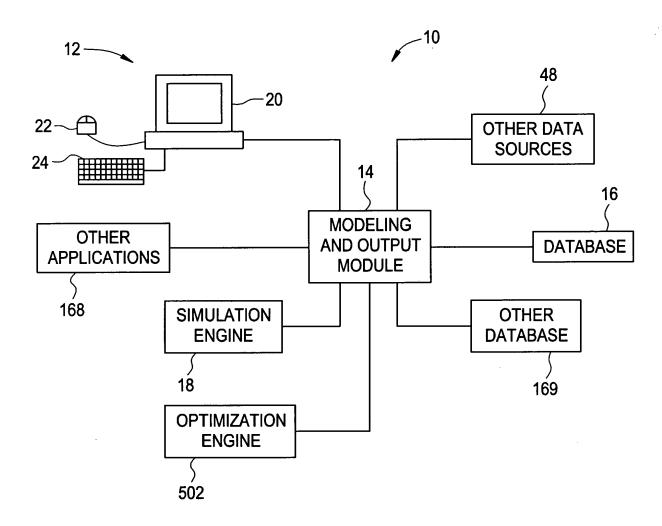
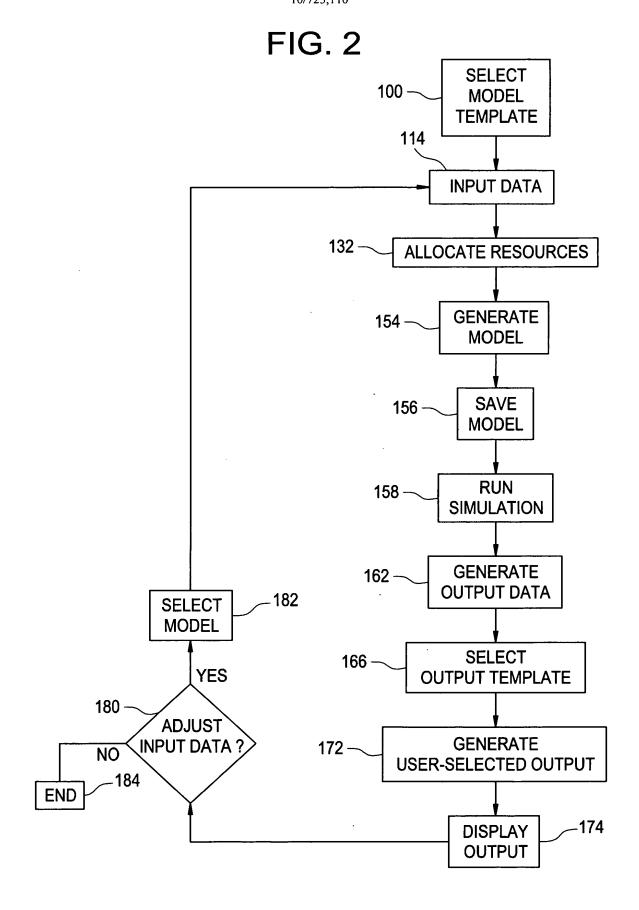
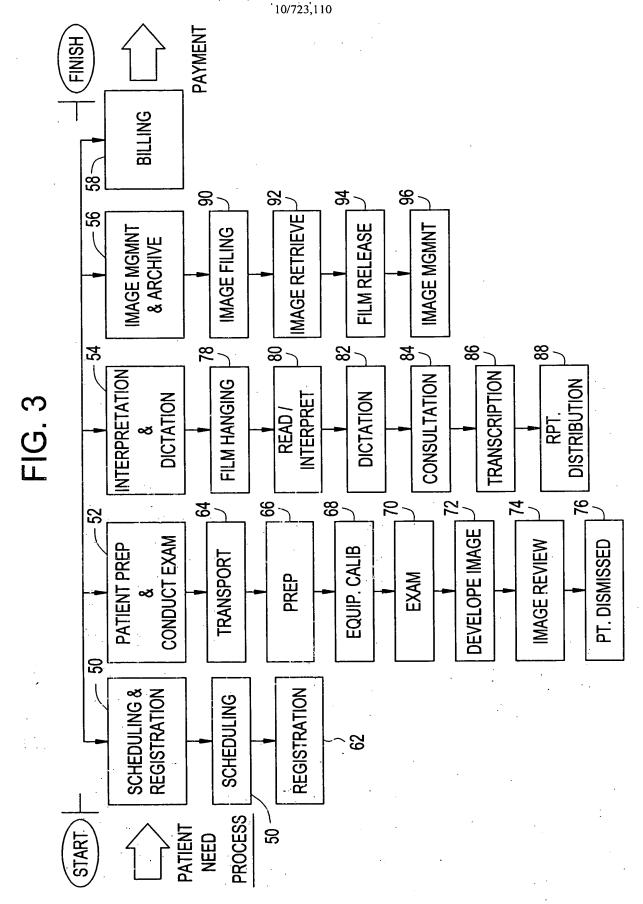
10/723,110

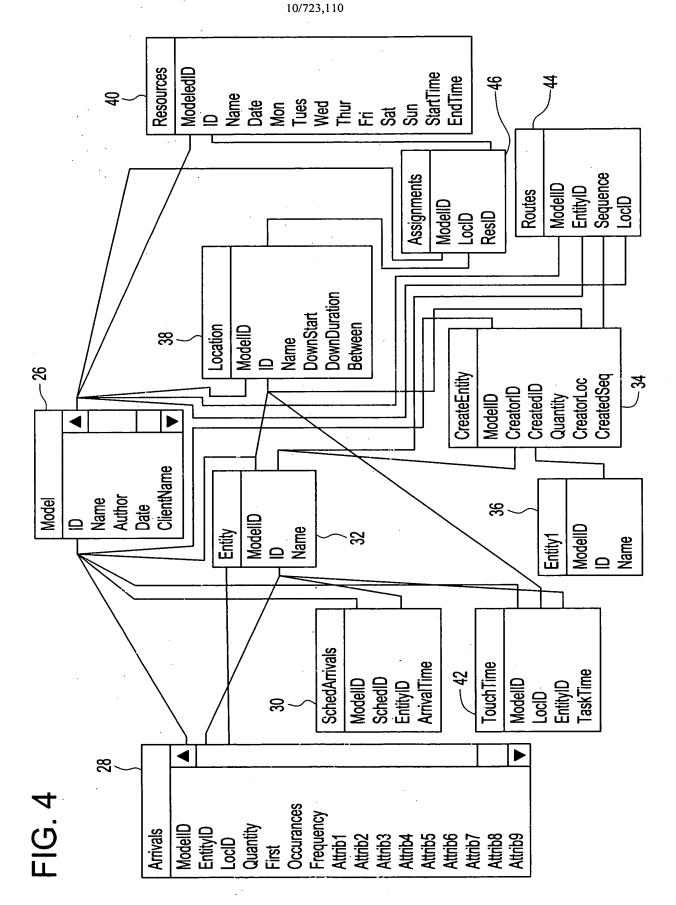


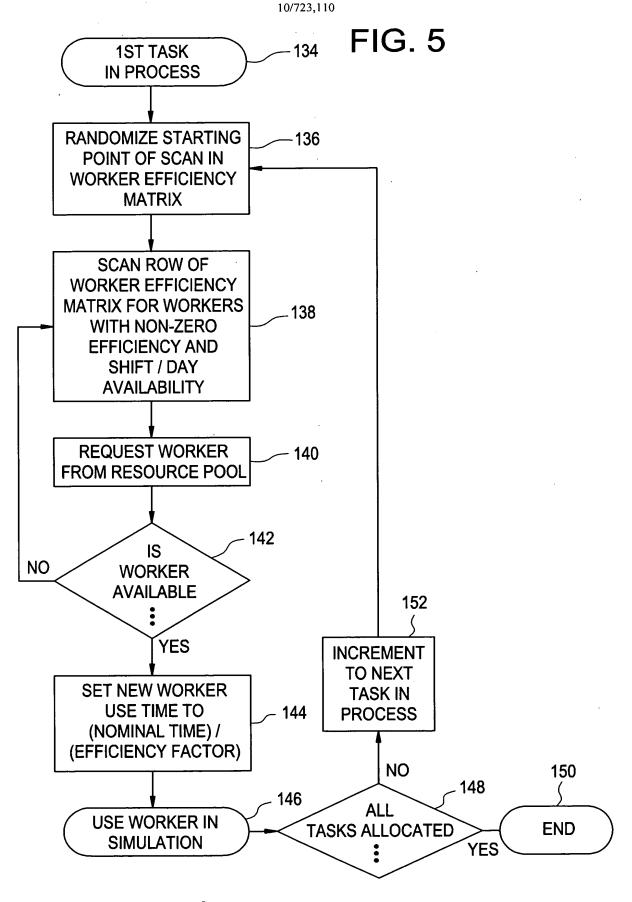
FIG. 1











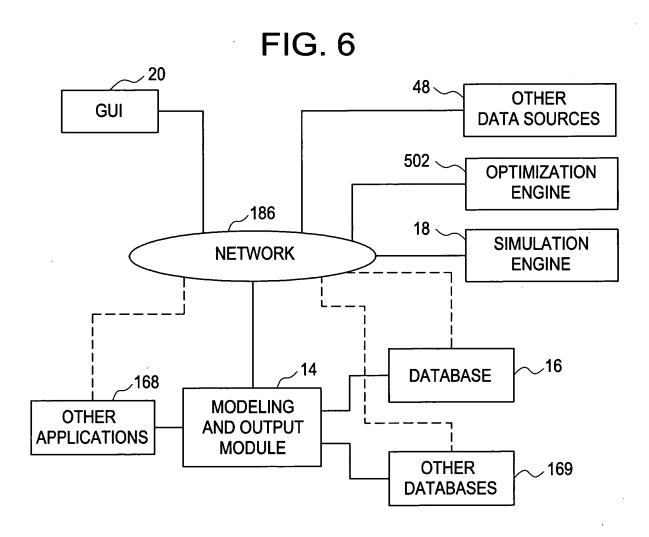
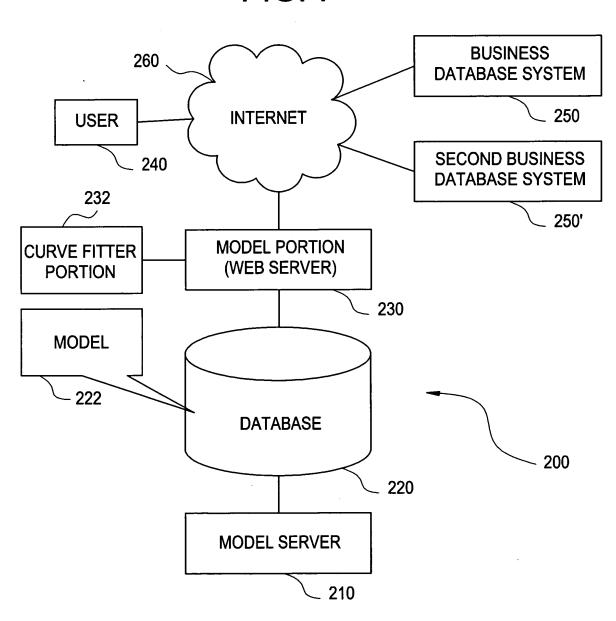
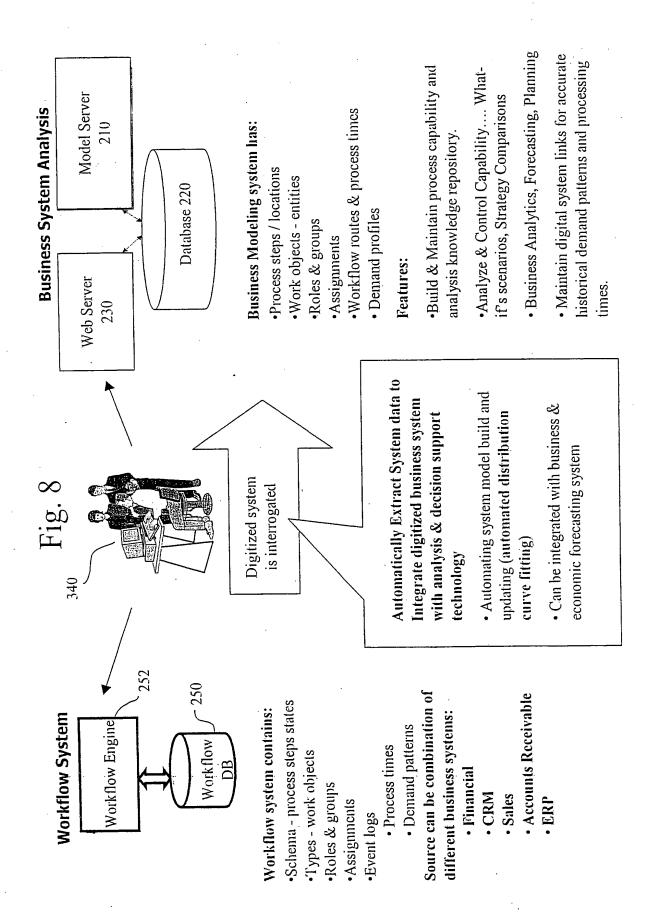
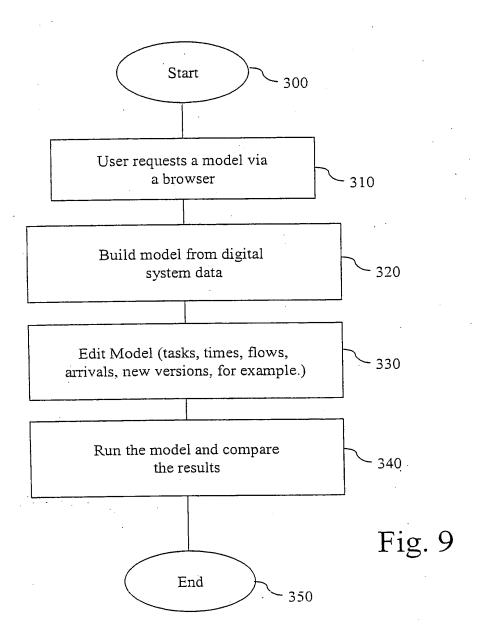


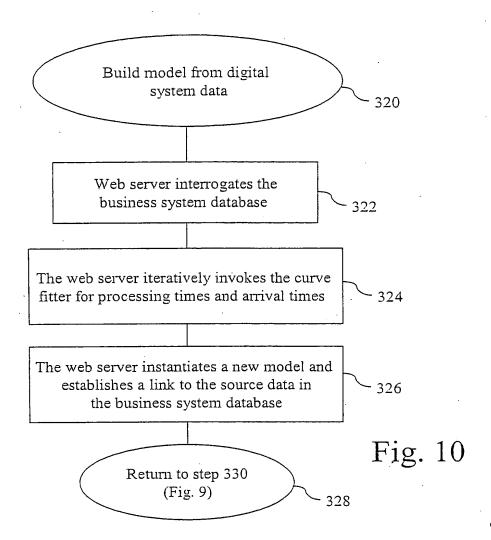
FIG. 7

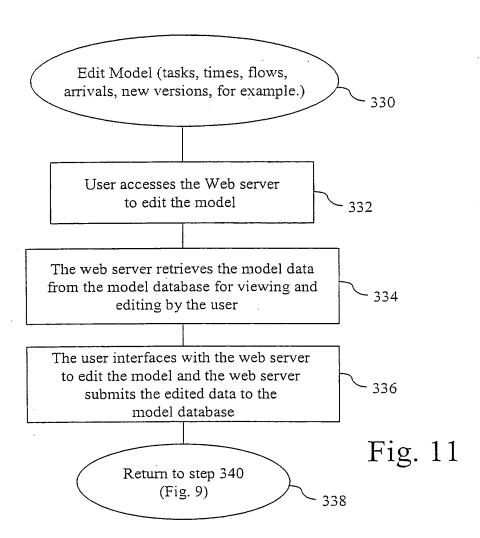


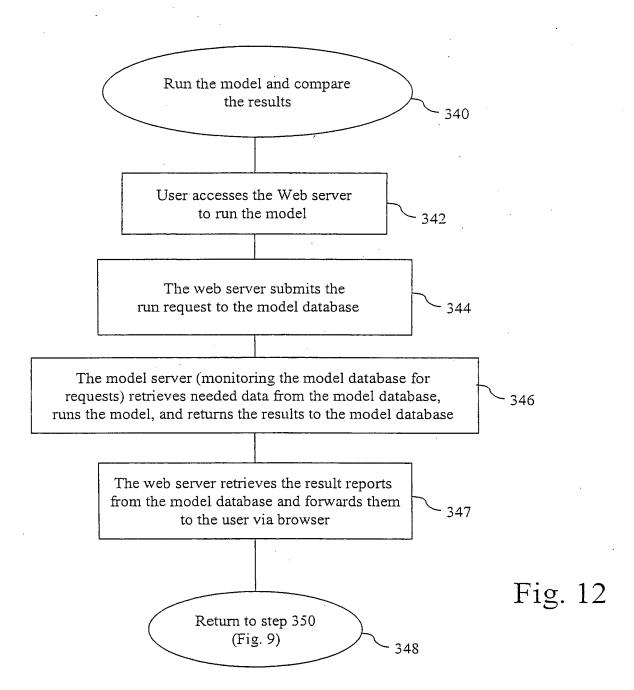
System and Method for Optimizing Simulation of a Discrete Event Process Using Business System Data Richard Messmer 10/723,110

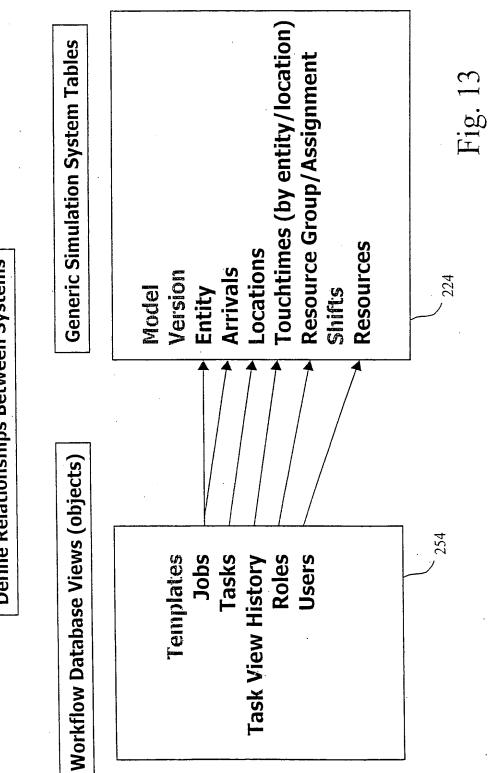




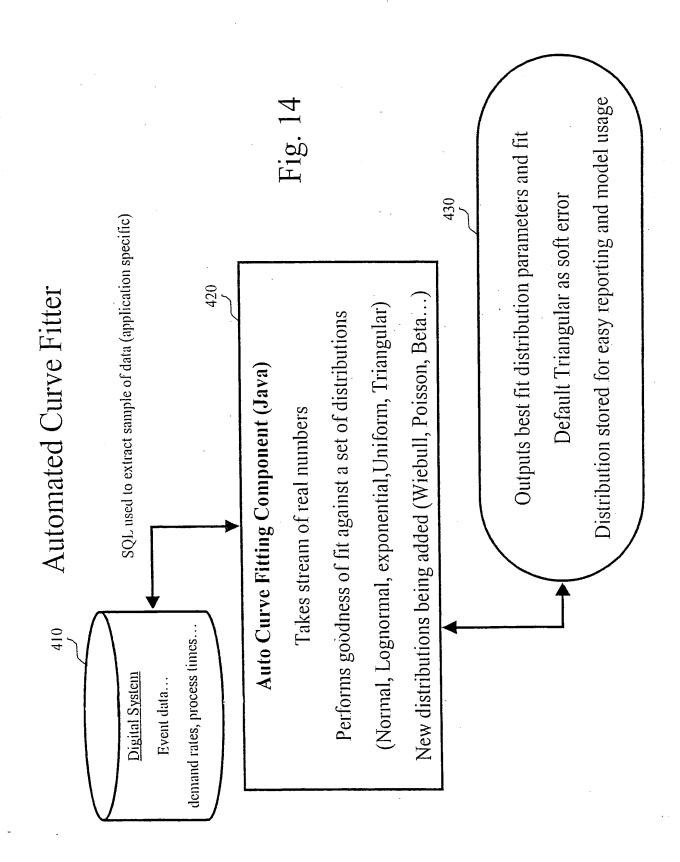


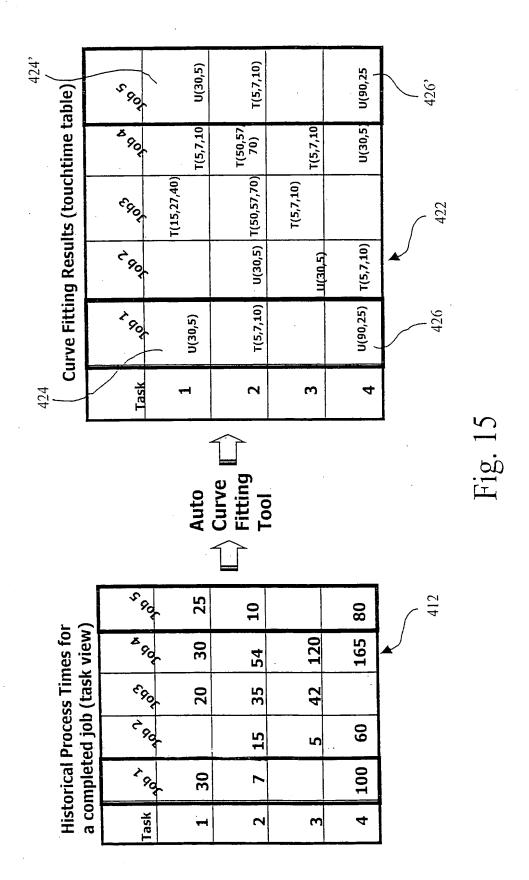






Define Relationships Between Systems

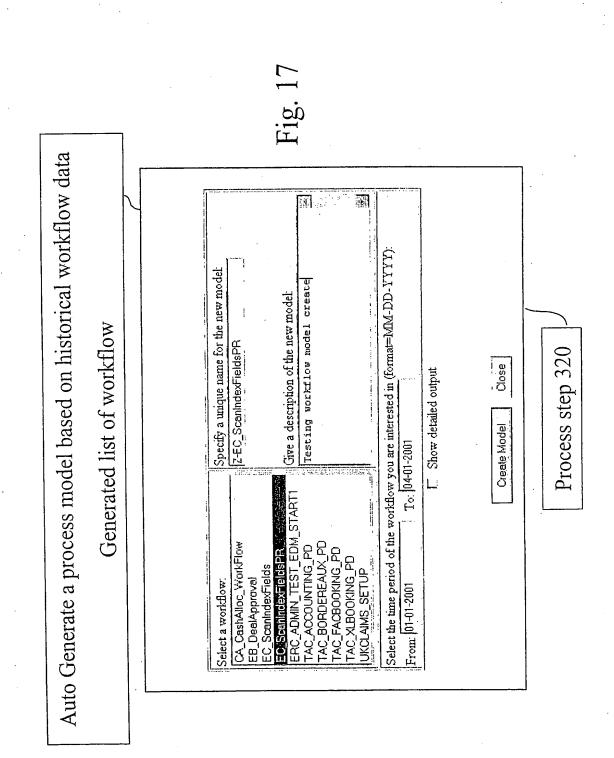


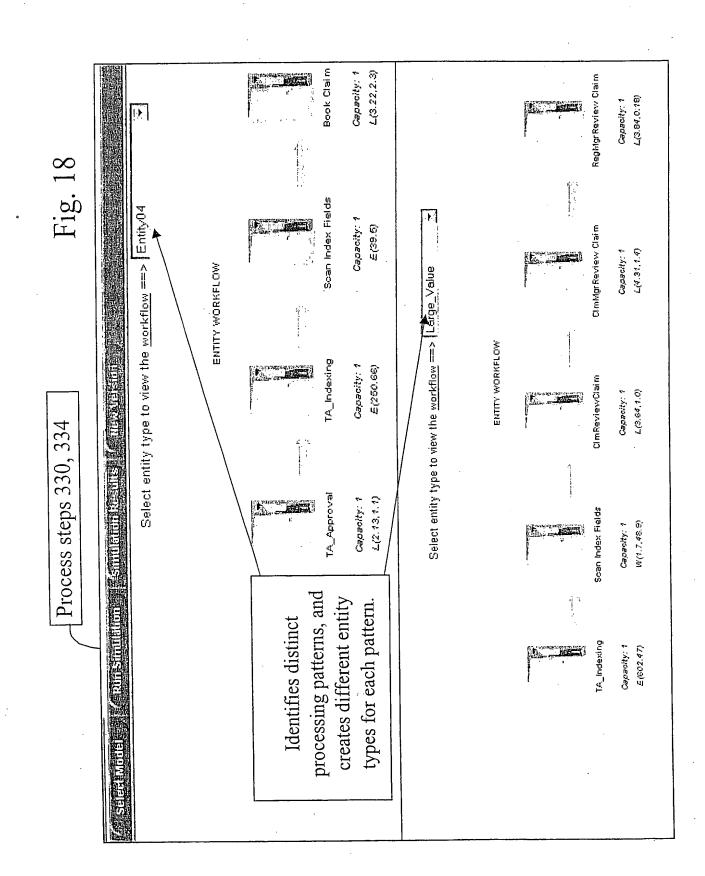


Process steps 310, 332, 342

COMING SOON - Models may be created and updated from digital workflow system such as TIBCO and eMatrix. This will allow more accurate process time and arrival rate distributions to easily and automatically be incorporated into your business critical process simulations. The Generic Business System Process Modeling System allows process owners and quality leaders the ability to test their business system's performance under a variety of conditions. This WEB based dynamic modeling technology will allow businesses to construct and save a variety of business system workflow alternatives and test Select either an existing model (to modify) or a template (new model creation) and a version number to proceed to the next step. Create New Model ..|<u>+</u>-Click to generate model from workflow data Version <u>View</u> a real case scenario using CT/MR Optimizer Template List CT_Template Below are listed the models and templates currently defined in the system. See a Demo Delete Select Version system performance under a broad range of conditions. Testing workflow model create Mays New Model with right sequence How does this tool help? Click here to find out test EURO claims build Preliminary version Model Description Model List 2-EC

Fig. 16





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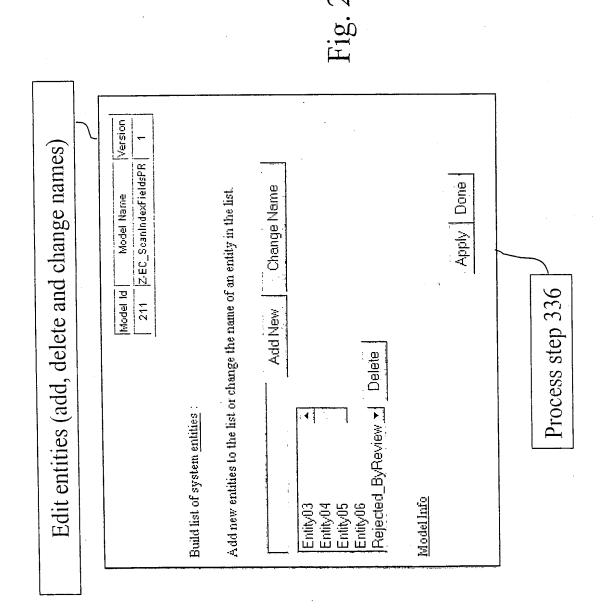
	Model Id 211 Z-E0	Model Name Z-EC_SoanIndexFieldsPR	Version 1	
Model information page; O <u>nly name,</u> accessible from any point in the mod can select models from the <u>database</u> .	r <u>nly name, version number as</u> n the modeling process. This <u>database</u> .	<u>nd description</u> can bo s page should appea	updated usi when a mod	Model information page; <u>Only name, version number and description</u> can be updated using this page. This page should be accessible from any point in the modeling process. This page should appear when a model is loaded from the database. You can select models from the <u>database</u> .
Model name:	Z-EC_ScanIndexFields	Version number:		
Number of entities	⊗	Mumber of <u>arrivals</u>		0
Number of resources	0	Number of resource groups	groups	0
Number of process steps	10	Number of <u>assignments</u>	nts.	0
Number of <u>workflows</u>	32	Last modified Scheduled Arrivals	uled Arrivals	50
You can edit the model des name or version number an changes to while saving th	escription or create another model usi and pressing the update button. This the current model for future reference.	odel using this mode n. This will create a 1 ference.	l as a starting iew instance	tescription or create another model using this model as a starting point or template by changing the and pressing the update button. This will create a new instance of the model that you can make the current model for future reference.

Process step 336

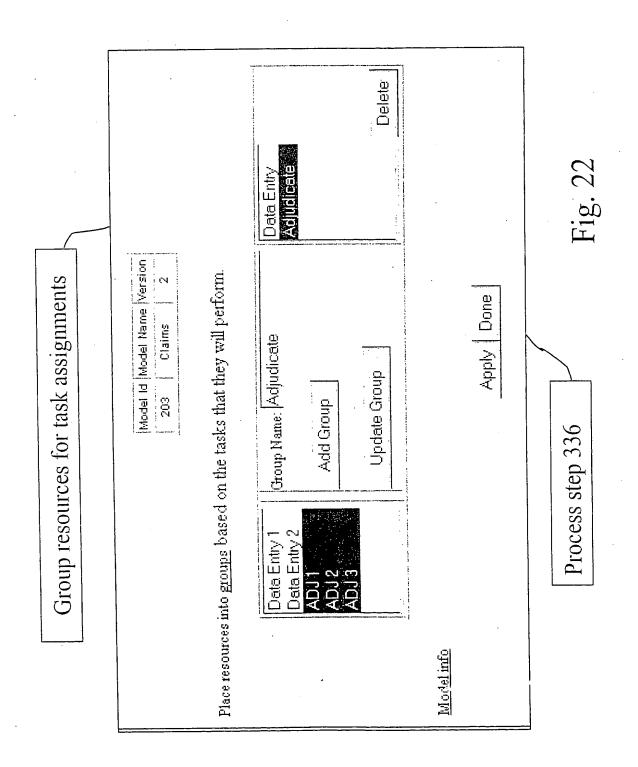
Done

Update

Model description: Testing workflow model create



Process step 336 NOTE: Schedules should be defined for both resources and operations or tasks on this page. Schedules can be selected and assigned to process steps on the process step page. Define schedules to reflect the actual availability of the resources and Set resource Schedule.CAN THIS BE DONE WITH A GRAPHIC CONTROL? W Monday W Tuesday W Wednesday W Thursday W Friday Add New Schedule 100 T AM T To: 5 T 00 T Edit resources (add, delete, schedule and change names) Version Z-EC_ScanindexFieldsPR ☐ Saturday ☐ Sunday Model Name Delete Apply Scheduled Hours: Scheduled Days: From: 8 Apply Model Id 211 Build a list of system <u>resources</u> : Add new , resources to the list or change a resource Delete ' Update Name: DataEntry_ Cost per Hr: 🔟 Add New Model Info

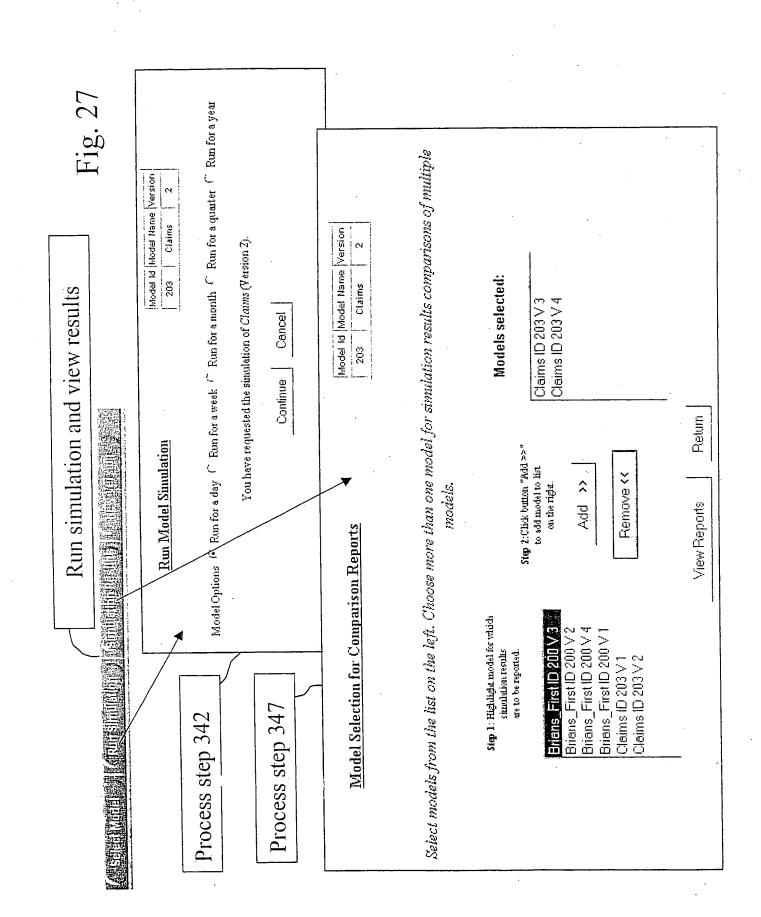


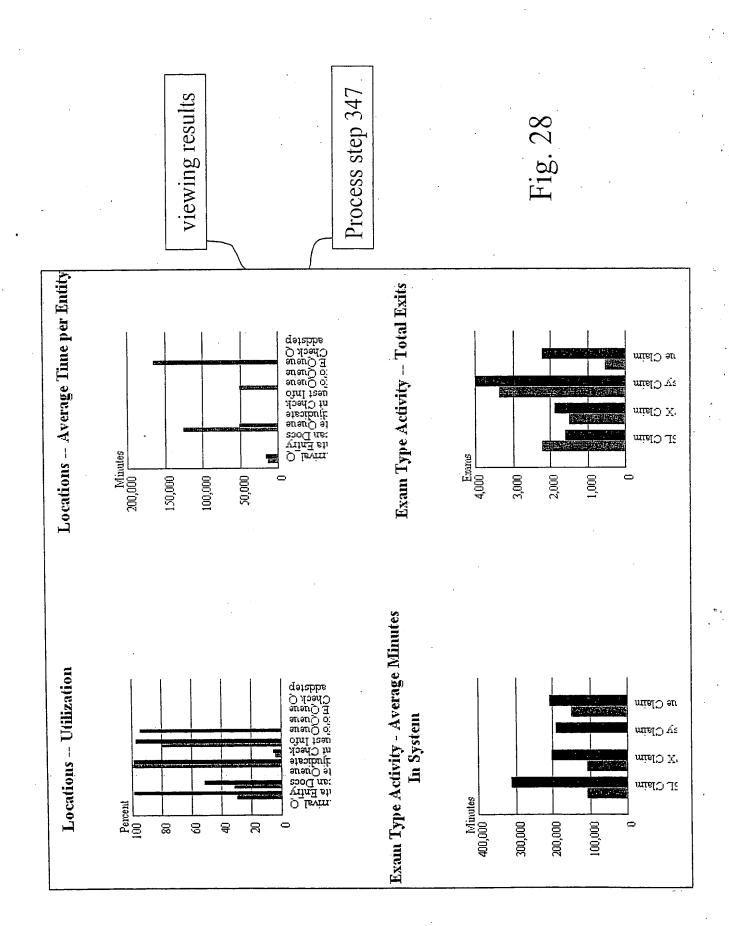
Resource Group Task	Task Assignments		Model Id Model Name Version 203 Claims 2	(F)
Define jobs that	obs that individuals in this resource group can perform in this model.	source group can pe	cform in this model.	
Assign first working step in job:	How many of this resource?	Resource Group:	Assign last working step in job:	ep in job:
At Data Entry	<u> </u>	Data Entry 🕶	Works until Data Entry step:	F
			n resource is re	eleased for other jobs)
			Save this job definition	nition
<u>Jodel info</u>		Park Comment of the C		
Curr	Current Job Assignment List	ent List		
At Data Entry, 1 Data Entry works u	works until task at Data Entry is complete	ry is completed		
		·	ш	Remove job defi
				Apply
Group resources for task assignments	task assignn		Process step 336	Fig 23
			i	11.11

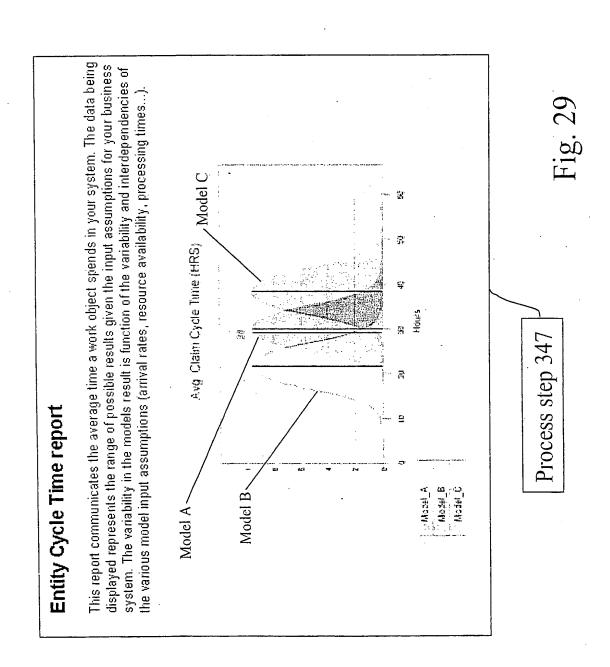
Process steps (add, delete and modify)	odify)
no series () series (
Z-EC_SoanIndexFieldsPR	
build a list of system process steps : Add new process steps to the list or change a process in the list.	e a process in the list.
Name: Scan Index Fields <u>capacity</u> : 1 cost per use 0	Set Process Downtime : Set Downtime
Add Before Add After Change Selected	First Time: 0
TA Indexing →	Duration: 0
Scan Inclex Fields:	Time Between: 0
<u>Aodel info</u>	
Apply Done	
Process step 336	Fig. 24

Change arrival patterns (Number & frequency)
Model Id Model Name Version 2 203 Claims 2
Arrivals describe the entry pattern of entities into the business process from an external source.
Entity Arrives at Process Step Qty. Each First Time Occurances Frequency
SL Claim
Add Arrival Update Del Arrival
SL Claim At Arrival_Q 15 0 INF 168 HR SL Claim At Arrival_Q 15 24 INF 168 HR SL Claim At Arrival_Q 15 72 INF 168 HR SL Claim At Arrival_Q 15 96 INF 168 HR SL Claim At Arrival_Q 15 96 INF 168 HR
<u>Model info</u>
Apply Done
Process step 336 Fig. 25

ocess flow and processing times with the workflow screen	Model Id Model Name Version 211 Z-EC_SoanIndexFieldsPR 1	dow for Entity: Large_Value	rocess step: Enter the processing Time: Add Before Add After Copy	S Update	Claim Workflow generated time RegMgrReview Claim L(3.84,0.18) RegM	rroval rroval Delete	Set Time		Apply Done	Process step 336 Fig. 26
hange process flow		Build <u>Worldlow</u> for Entity:	Select a process step:	TA_Indexing Scan Index Fields ClmReviewClaim	ClmMgrReview Claim RegMgrReview Claim ClmLeaderReview	TA_Approval Close Sleep UVVComments		<u>Model Info</u>		







TOUCHTIME_DISTRIBUTION

USERINFO

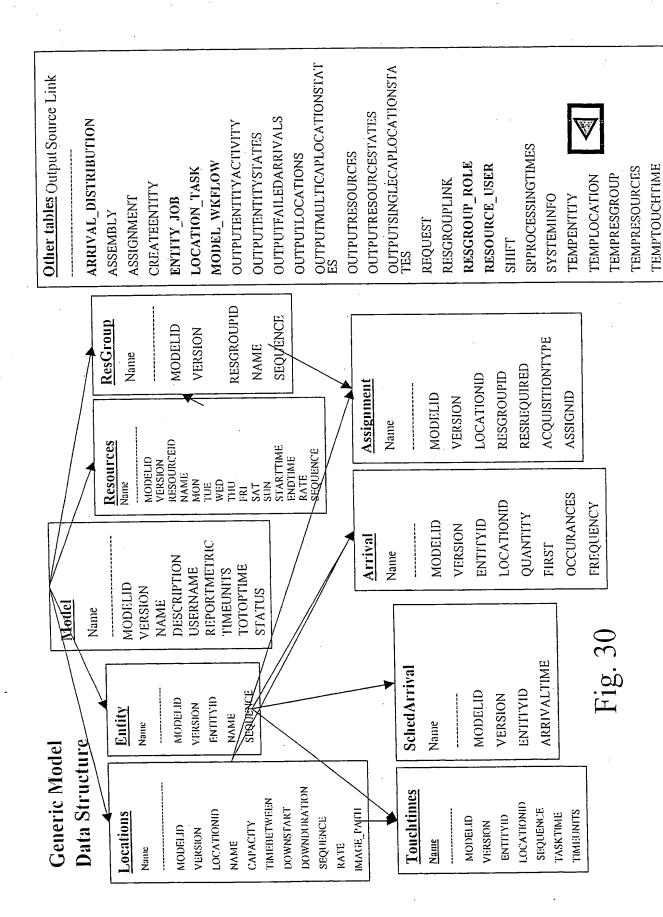
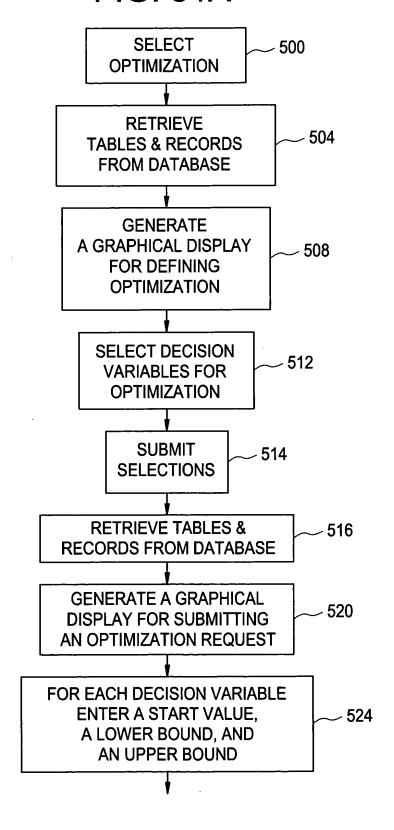
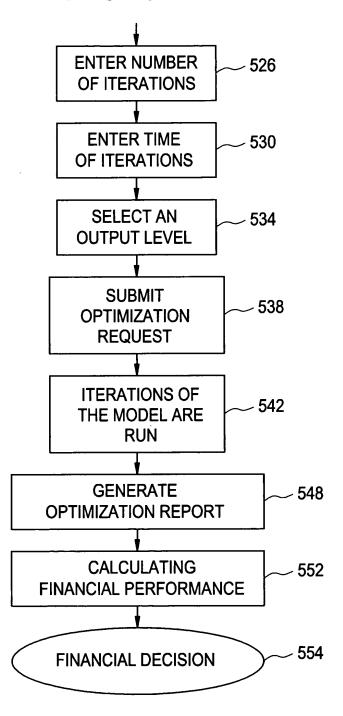
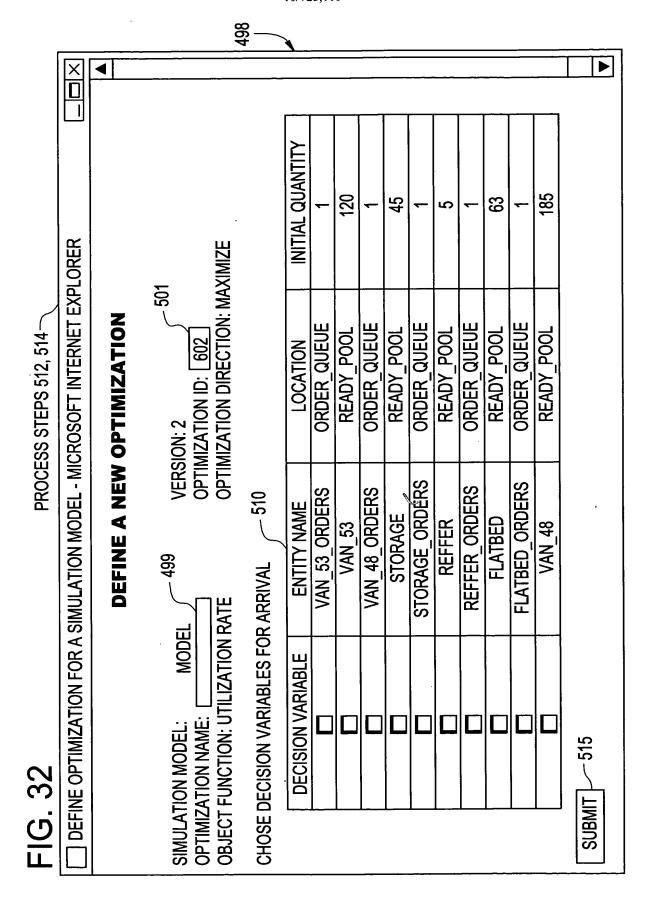


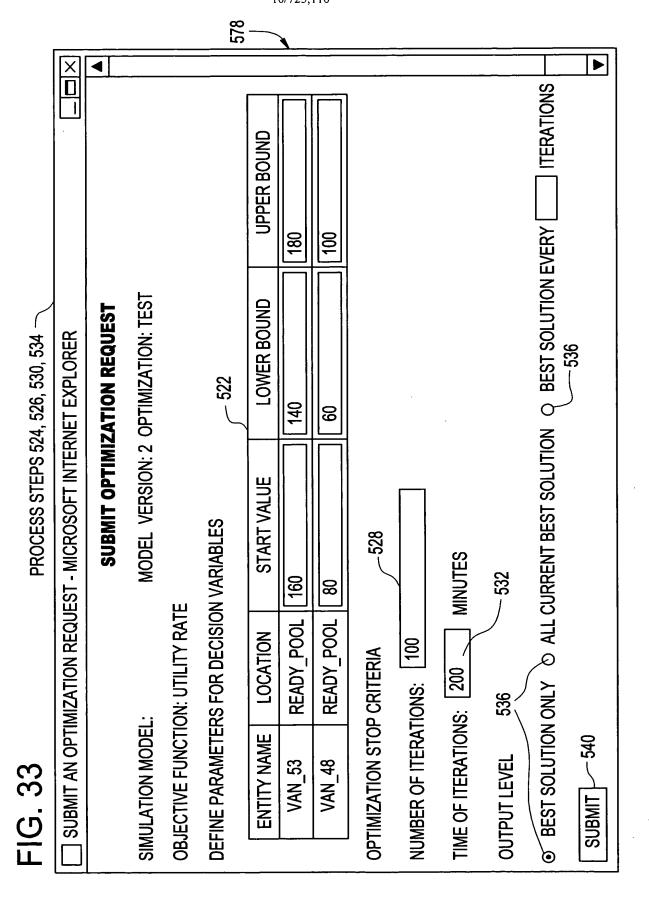
FIG. 31A











546 × 0 4 ightharpoonsLOWER BOUND VAN 48, READY POOI 100 50 165 105 9 147 **UPPER BOUND** PROCESS STEP 548 **OPTIMIZATION REPORT** VIEW OPTIMIZATION RESULTS - MICROSOFT INTERNET EXPLORER 100 20 VAN 53, READY POOL 100 MODEL ह्यक्ष 50 START VALUE TEST UTILIZATION RATE MAXIMIZE 550 185 0.867049180327869 0.914343434343434 0.923857868020305 0.905509433962264 0.912333333333333 **OBJECT VALUE** READY_POOL READY_POOL LOCATION MODEL NAME:VERSION:OPTIMIZATION:FUNCTION:DIRECTION: OPTIMIZATION OUTPUT MODEL INFORMATION **DECISION VARIABLES ENTITY NAME ITERATION** VAN_53 VAN_48 FIG. 34 4 ∞ 4

FIG. 35

					_		
	REVENUE CHANGE	305 \$1,447,782	-29 (\$104,414)	-155 (\$698,802)	-78 (\$308,111)	-116 (\$493,719)	
ļ.	UNIT DELTA	302	-29	-155	8/-	-116	
COST ASSOCIATED	MILIT CHANGES IN PORTFOLIO, MAINTENENACE?						
٩٢	REVENUE FROM RENTAL DAY (\$15)	\$1,447,782	\$1,343,368	\$748,980	\$1,139,671	\$954,063	
TOTAL RENTAL	DATS A YEAR (365 DAYS)	96518.775	89557.86	49932	75978.035	63604.17	
	AVERAGE UNITS OUT ON RENT	264.435	245.364	136.8	208.159	174.258	
	UTILIZATION	0.867	0.889	0.912	0.917	0.922	
	48" VAN	185	18	100	167	134	_
	53" VAN	0	113	20	99	92	